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being made, and he trusted that in a few years our ideas as to the condition of the depths of the sea may be as definite as they are with regard to regions to which we have long had ready access. —*London Times*.

THE ARABIAN DESERT OF EGYPT.—Dr. G. Schweinfurth writes from Cairo, on the 18th of June, to the *London Athenæum* an account of his visit to the desert region lying between the Nile and the Red Sea. He started from a village near Atfih, on the Nile, on March 29th, and, taking a circuitous route, in the course of which he examined, more or less minutely, fifty-five wadis, returned to the Nile opposite to the town of Siut, on June 9th. Whilst he found remains of Roman settlements, neither inscriptions nor ruins indicate any knowledge of this region by the ancient Egyptians. The orographical and hydrographical features of this territory, to the east of the Nile, are far more varied than might have been expected. Every wadi has its own physiognomy. The rocks may belong to the same geological formation, but they vary exceedingly in contour and configuration. The wadis wind about in a curious manner, sloping down gently or steeply; the vegetation met within them is sometimes sporadic, at others ephemeral or continual; the animal world, too, contributes to impress a character upon each of the two hundred principal wadis which are met with in this small corner of North-eastern Africa.

MICROSCOPY.¹

NATIONAL MICROSCOPICAL CONGRESS—This Convention, a call for which had been published by the Indianapolis Lyceum of Nat. Hist., assembled at Indianapolis on Wednesday morning, August 14th. About sixty members were in attendance, representing fifteen microscopical societies in different parts of the country. Kev. A. B. Hervey was appointed chairman, and H. F. Atwood, secretary. Addresses of welcome were made by Mayor Caven and Dr. O. Evarts, and responded to by the chairman. Regular organization was then effected by the election of the following officers: President, Dr. R. H. Ward, of Troy; vice-presidents, Prof. J. E. Smith, of Cleveland, and Dr. W. W. Butterfield, of Indianapolis; secretary, H. F. Atwood, of Chicago; treasurer, Dr. J. B. Marvin, of Louisville. Four days were occupied with the meetings except Friday afternoon, which was devoted to a railway excursion. On Friday evening a soirée was given at the court house, which was largely attended by citizens. Owing to the large attendance and the limited number of instruments, no effort was made to classify the objects, and the exhibition was of altogether a popular character. On the last day of the meetings a special committee, which had been previously appointed, reported in favor of organizing permanently under the name of the "American Society of Microscopists," with a membership

¹ This department is edited by Dr. R. H. WARD, Troy, N. Y.

open to all persons interested in microscopical science, and with meetings to be held annually at places selected during the previous meeting. After much discussion and no little difference of opinion as to radical points, the plan was adopted as reported, and Buffalo fixed upon as the place of meeting for next August. The following officers were unanimously elected for the first year: President, Dr. R. H. Ward, of Troy; vice-Presidents, S. W. Dennis, of San Francisco, and C. M. Vorce, of Cleveland; secretary, Dr. H. Jameson, of Indianapolis; treasurer, H. F. Atwood, of Chicago. The president-elect insisted upon declining election on the ground of having been presiding officer of the Congress, but finally withdrew his resignation. During the meeting papers were read on the following subjects, interesting discussions being drawn out by many of the papers:

"Limit of accuracy attainable in measurements with the microscope," by Prof. Wm. A. Rogers, of Cambridge. "Some new forms of mounting," by C. C. Merriman, of Rochester. Abstracts of these two papers will be published in a succeeding number.

"Formulae of objectives," by W. H. Bulloch, of Chicago. The construction of several modern lenses of large immersion aperture was given in diagrams constructed from the lenses themselves, with results remarkably close to those formerly obtained by tracing the light mathematically through the objectives according to the data furnished by the makers.

"Angular aperture," by Dr. G. E. Blackham, of Dunkirk, N. Y. This paper gave a full review of the literature of the subject, limited angular aperture to the angular distance of the outside rays of the widest pencil of light, which the object glass could gather up and bring to a focus, with the formation of a well defined image of the object, and insisted upon the superiority, for all purposes, of well constructed objectives of extremely wide angle.

"Angular aperture defined," by Prof. Romyn Hitchcock, of New York. In order that the term angular aperture should mean something definite, and to avoid ambiguity and misunderstanding in future discussion on the subject, it was proposed to adopt a definition of the term which, right or wrong, should be recommended to the microscopists of the country as a convenient and uniform usage. The triangle method was proposed for general adoption, considering the angular aperture of a microscope objective to be the angle of the apex of a triangle having a base equal to the available diameter of the front lens, and a height equal to the actual focal length (working distance), measured in air for a dry lens, and in the fluid employed for an immersion, the collar being adjusted for the most perfect definition in every case. While nearly all the members seemed to be personally in favor of the usage proposed, a motion that the congress should attempt to settle the question by requesting its general adoption met with so much opposition that it was withdrawn.

"Mechanical fingers," by C. M. Vorce, of Cleveland. In this paper the mechanical finger was spoken of as a kind of stage forceps adapted to objects too small and fragile for ordinary forceps, and as an important accessory for the microscope, even as a means of study of minute forms and to those who do not wish to mount objects. Those forms of finger were described which are attached to the objective or to the movable stage, and the home manufacture of them recommended as easy and effective. Their efficiency is greater in proportion to the greater number of movements of the stage and sub-stage. The apparatus should be furnished with a variety of points for different kinds of work, varying from a fine mouse-whisker to a split point of whalebone or quill.

"Microscopical study of the ashes of leaves," by Dr. R. H. Ward, of Troy, describes the method by which leaf ashes may be prepared so as to preserve much of the structure of the leaf. The books speak of the siliceous residue of the leaves of the grasses, but many other leaves are equally available. Leaves of trees are generally used with more success than those of herbs, and they should be gathered late in the summer. A piece of dry leaf is laid on a strip of platinum foil or thin mica, covered with mica or a cover-glass to prevent curling up, and carefully heated over an alcohol lamp or Bunsen burner until the organic matter is slowly burned out and the mineral matter, or ash, remains undisturbed. This is then dropped on to a slide, wet with turpentine, and very carefully mounted in soft balsam. If slightly crushed in mounting, or containing a trace of carbon at some point, the value of the object is often increased. These preparations can be made with great ease and rapidity, and show the construction of the parenchyma, veins, epidermis, stomates and hairs with great beauty and distinctness. In this way was prepared a slide of leaf ashes which was recently sent through the circuits of the Postal Club and which excited an unexpected amount of interest and correspondence.

"Classification of algæ," by Rev. A. B. Hervey, described the systematic arrangement of sea weeds by means of their peculiarities of reproduction, and showed how completely our knowledge of the subject is due to the microscope. The writer urged the more frequent preparation, for use and for exchange, of series of slides illustrating typical species in groups studied by specialists in natural history.—(*To be Continued.*)

MICROSCOPICAL DIRECTORY.—The fullest list of American microscopists yet published will be found in the "Naturalists' Directory for 1878," published by S. E. Cassino, Salem, Mass.

EXCHANGES.—Lake Michigan diatoms mounted or raw material, also diatoms of Northern Illinois, for good slides or material. B. W. Thomas, 132 La Salle street, Chicago, Ill.